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VOL. 23 NO. 9 March 2, 1973

Cooperative Economic Insect Report

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PLANT PROTECTION AND QUARANTINE PROGRAMS
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
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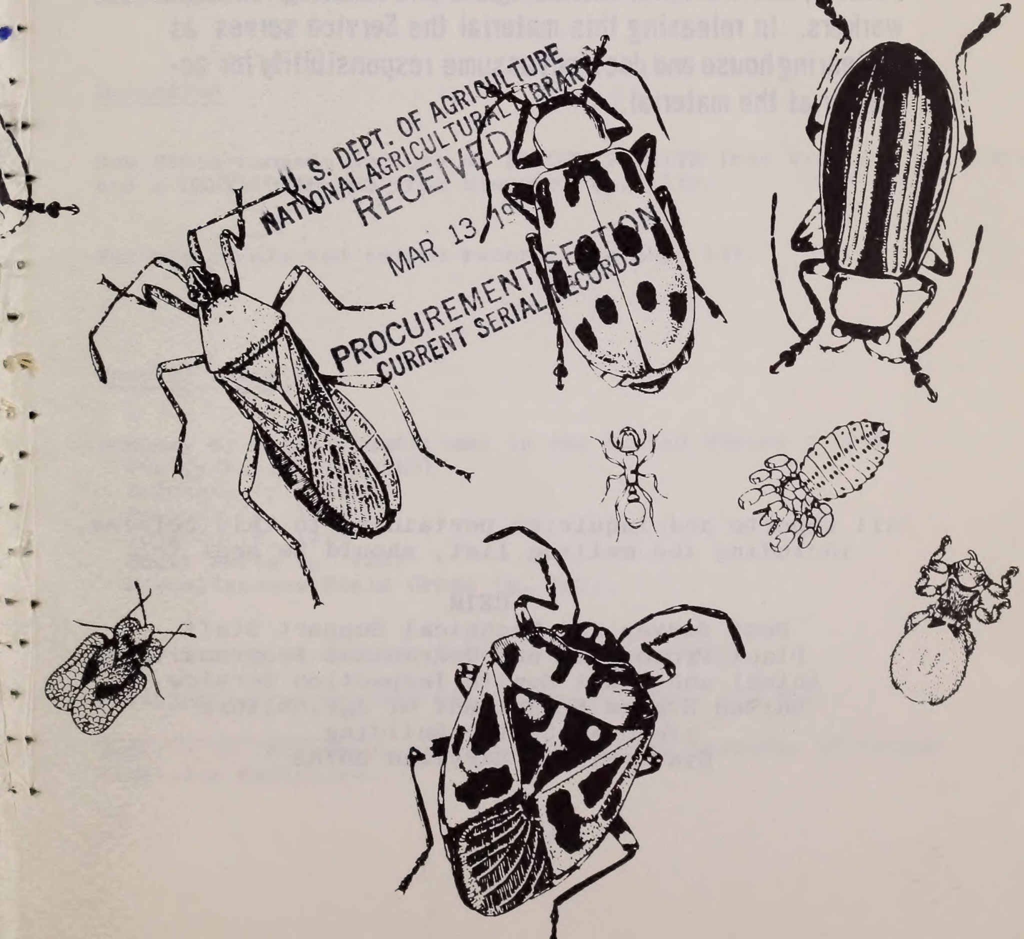

ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
PEST SURVEY AND TECHNICAL SUPPORT STAFF

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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CEIR
Pest Survey and Technical Support Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

Volume 23 March 2, 1973 Number 9

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ALFALFA WEEVIL egg hatch and larvae in alfalfa terminals observed in southern Oklahoma. (p. 109).

SOUTHERN PINE BEETLE outbreak may continue in North Carolina. Activity of an ENGRAVER BEETLE reported in Alabama. (p. 110).

First EASTERN SUBTERRANEAN TERMITE swarms of season reported in Maryland and Kentucky. (p. 110).

Detection

New State records include an ERIOPHYID MITE from Virginia (p. 109) and a PENTATOMID BUG from Missouri (p. 111).

For new county and island records see page 111.

Special Reports

Summary of Insect Conditions in the United States - 1972
  Forage Legume (p. 113)
  Soybeans (p. 119)
  Peanuts (p. 120)
  Tobacco (p. 122)
  Sugar Beets (p. 123)
  Miscellaneous Field Crops (p. 123)

Distribution of Alfalfa Weevil. Map. (p. 116).

Distribution of Western Corn Rootworm. Map. (p. 124).

Reports in this issue are for week ending February 23 unless otherwise indicated.

CONTENTS

Special Insects of Regional Significance....109

Insects Affecting

- Small Grains....109
- Forage Legumes....109
- Potatoes, Tomatoes, Peppers109
- Ornamentals....109
- Forest and Shade Trees....110
- Man and Animals....110
- Households and Structures..110
- Miscellaneous Wild Plants..111
- Stored Products....111

Beneficial Insects....111
Federal and State Plant Protection Programs....111
Detection....111
Light Trap Collections....111
Hawaii Insect Report....112

Summary of Insect Conditions in the United States - 1972

- Forage Legumes....113
- Soybeans....119
- Peanuts....120
- Cotton....120
- Tobacco....122
- Sugar Beets....123
- Miscellaneous Field Crops....123

Distribution of Alfalfa Weevil. Map....116
Distribution of Western Corn Rootworm. Map....124

WEATHER OF THE WEEK ENDING FEBRUARY 26

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

PRECIPITATION: Precipitation early in the week was mostly spotty and light. Fog shrouded the interior valleys of California. Cloudy weather prevailed from the northern and central Rocky Mountains to the Great Lakes. Light scattered snow flurries occurred in portions of this area. Freezing drizzle iced spots in the upper Mississippi River Valley. Drizzle was seen along the western Gulf coast and rain splashed down in central and southern Florida. Fog in California dissipated in a day or so. A storm off the coast of Baja California pumped moist Pacific air across the Mexican border into the dry Southwest. Rain fell from southern California to central and southern Texas. Snow fell at times in the mountains of southern Arizona and southern New Mexico. Warm rain fell on the snow pack in some mountainous sections of Arizona and New Mexico and caused a rapid runoff. By midweek, the storm had crossed northern Mexico and was producing rain as far east as Louisiana. Snow accumulated to 5 inches at Carrizozo and Roldoso, New Mexico. Phoenix, Arizona, received 0.86 inch of rain and 1.25 inches fell at Tucson in the 48 hours ending early Thursday morning. Flurries continued from the northern Great Plains to the Great Lakes. Three inches fell at Detroit, Michigan, Wednesday forenoon. Snow spread over the Northeast late Wednesday and Thursday. A storm off the middle Atlantic coast increased activity in the Northeast. A western storm continued dumping snow in the southwestern mountains from Arizona to Texas. Grand Canyon, Arizona, received a foot of new snow early Thursday and by noon,

Weather of the week continued on page 112.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - NEW MEXICO - Averaged less than one per yard on wheat in Curry and Roosevelt Counties. (Mathews).

GREENBUG (Schizaphis graminum) - NEW MEXICO - Generally light, 2-8 per linear foot, on wheat in Curry and Roosevelt Counties. (N.M. Coop. Rpt.). TEXAS - Ranged 0-16 per row foot of small grains in Wilbarger, Foard, Archer, Knox, Haskell, and Throckmorton Counties. Light in Jones and Motley Counties. (Boring).

SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - ALABAMA - All stages light to heavy in association with extreme case of barley yellow dwarf virus on oats planted for erosion control along new highway roadbed in Lee County. (McQueen).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Ranged 0-10 per row foot in small grains in Throckmorton, Haskell, Knox, Archer, Wilbarger, Foard, and Wichita Counties. Light in Jones County. (Boring).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - OKLAHOMA - Egg counts per square foot by county: February 10 - Garfield, Alfalfa, Woods, Woodward 9-16; Major 33; Grant 64. February 15 - Payne 130. Egg hatch noted February 16 in Stephens County and larvae found in alfalfa terminals in southern Bryan County February 21. (Okla. Coop. Sur.).

PEA APHID (Acyrthosiphon pisum) - ARIZONA - Averaged 550+ per 100 sweeps of alfalfa at Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

TOMATO PINWORM (Keiferia lycopersicella) - FLORIDA - Caused severe damage to 200 acres of 9 to 10-week-old tomatoes in Immokalee area, Collier County. (Fla. Coop. Sur.).

ORNAMENTALS

AN ERIOPHYID MITE (Trisetacus juniperinus) - VIRGINIA - Severely infested Japanese garden juniper, Juniperus procumbens, in Falls Church, Fairfax County. Collected January 18, 1973, by J.A. Weidhass. Determined by H.H. Keifer. This is a new State record. (Weidhaas).

LONGTAILED MEALYBUG (Pseudococcus longispinus) - FLORIDA - Nymphs and adults severely infested 24 of 40 sago palms, Cycas revoluta, around public building at Tampa, Hillsborough County. (Fla. Coop. Sur.).

GREEN PEACH APHID (Myzus persicae) - ARIZONA - Abundant on weeds, ornamentals, and bedding plants in all areas of Salt River Valley, Maricopa County. (Ariz. Coop. Sur.).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - NORTH CAROLINA - Outbreak detected during November and December 1972 on Grandfather Ranger District of Pisgah National Forest in McDowell County. Estimated 997 actively infested trees per 1,000 acres of host type in 6-12 locations. Brood densities averaged 461 forms per square foot of bark surface. This condition conducive to continuation of outbreak in area. (USFS). ALABAMA - Group of ten shortleaf pines, ranging from 15 to 25 feet high at edge of 1972 infestation in Chambers County recently died. This is further evidence that overwintered broods are active and pose threat to pines in State during 1973. (McQueen).

AN ENGRAVER BEETLE (Ips calligraphus) - ALABAMA - First new pitch tubes of season noted on 60-foot pine tree in Auburn, Lee County. Moved from nearby tree killed in 1972 which now has light overwintering brood. Fresh pitch tubes indicate adults in flight. Activity seems earlier than usual as temperatures in area averaged 6 degrees below normal. (McQueen).

DEODAR WEEVIL (Pissodes nemorensis) - MISSISSIPPI - Leader damage evident on 15-foot loblolly pines in Choctaw and Webster Counties. (Robinson).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 4 confirmed cases reported in continental U.S. during period February 11-17, all in South Texas. Total of 42 cases reported in Mexico. Number of sterile flies released in U.S. this period totaled 64,830,000, all in Texas. Total of 130,970,000 sterile flies released in Mexico. (Anim. Health).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Survey for overwintering adults in infested counties still negative. Overwintering adults have been located in State. (Robinson).

COMMON CATTLE GRUB (Hypoderma lineatum) - KENTUCKY - Larvae averaged 2 per animal on backs of Holstein dairy cows of various ages in Fayette County. (Barnett). OKLAHOMA - Heavy on cattle in Delaware County, moderate in Osage County, and light in Payne County. (Okla. Coop. Sur.).

CATTLE LICE - OKLAHOMA - Lice, mainly Haematopinus eurysternus, heavy on cattle in Major, Delaware, and Cotton Counties, moderate in Payne and Osage Counties. (Okla. Coop. Sur.).

HOG LOUSE (Haematopinus suis) - OKLAHOMA - Heavy on hogs in Lincoln County. (Okla. Coop. Sur.).

HOUSEHOLDS AND STRUCTURES

OLDHOUSE BORER (Hylotrupes bajulus) - TENNESSEE - All stages collected February 22, 1973, by C.D. Gordon in home in Davidson County. Larval damage to furniture extensive. This is a new county record. (Gordon).

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - MARYLAND - First swarm of season reported at Beltsville, Prince Georges County. Peak flight activity not expected for another 4 weeks. (APHIS). KENTUCKY - First record of swarming received February 22 from Pendleton County. (Barnett, Scheibner).

MISCELLANEOUS WILD PLANTS

COTTON APHID (Aphis gossypii) - FLORIDA - Adults severely infesting stems and leaves of 40 percent of 500 purple passion plants, Gynura aurantiaca, at Apopka, Orange County. (Fla. Coop. Sur.).

STORED PRODUCTS

INDIAN MEAL MOTH (Plodia interpunctella) - NEW MEXICO - Light to moderate in miscellaneous feed in store at Roswell, Chaves County. (N.M. Coop. Rpt.).

BENEFICIAL INSECTS

A PENTATOMID (Euthyrhynchus floridanus) - MISSOURI - This predaceous species collected on oak at Portageville, New Madrid County, September 28, 1972, by E.C. Houser. Determined by W.S. Craig. This is a new State record. (Munson).

AN ICHNEUMON WASP (Bathyplectes curculionis) - MISSOURI - This parasite of Hypera postica (alfalfa weevil) recovered from alfalfa field in Ray County February 6, 1973, by J.L. Huggans. This is a new county record. (Munson).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - Lint cleaner inspections showed averages of 80 per bale in Bryan County and 60 per bale in Coal County. (Okla. Coop. Sur.).

RED IMPORTED FIRE ANT (Solenopsis invicta) - TEXAS - Mounds numerous on rangeland in southern part of Brazos County, near Millican. (Williamson).

DETECTION

New State Records - AN ERIOPHYID MITE (Trisetacus juniperinus) - VIRGINIA - Fairfax County (p. 109). A PENTATOMID (Euthyrhynchus floridanus) - MISSOURI - New Madrid County (p. 111).

New County and Island Records - ACACIA PSYLLID (Psylla uncatoides) HAWAII - Lanai (p. 112). AN ICHNEUMON WASP (Bathyplectis curculionis) MISSOURI - Ray. (p. 111). OLDHOUSE BORER (Hylotrupes bajulus) TENNESSEE - Davidson (p. 110).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville, 2/16-22, BL - GRANULATE CUTWORM (Feltia subterranea) 4.

HAWAII INSECT REPORT

General Vegetables - LEAF MINER FLIES (Liriomyza spp.) generally moderate, occasionally heavy, in snap beans at Kurtistown, Hawaii. About 80 percent of leaves with larval mines. Light in small plantings of green onions at Manoa and Koko Head, Oahu; ranged 10-17 percent of leaves infested. (Matayoshi, Otsuka).

Fruits and Nuts - Larvae of a NOCTUID MOTH (Phlegetonia delatrix) caused heavy damage to terminals of roadside Eugenia cumini at Kipahulu and Hana, Maui; eggs heavy on young leaves. (Miyahira).

Man and Animals - Mosquito collections during January from 58 light traps on Oahu totaled 496 Aedes vexans nocturnus and 6,299 Culex pipiens quinquefasciatus. Aedes catches ranged 0-280 at Ewa. Culex catches ranged 0-4,665 at Waipahu. (Mosq. Control Br. State Dept. of Health).

Forest and Shade Trees - Erratic populations of a NOCTUID MOTH (Melipotis indomita) ranged trace to heavy under loose bark and debris at bases of kiawe (Prosopis pallida) trees from Waianae to Ewa and Hickam Air Force Base, Oahu. ACACIA PSYLLID (Psylla uncatoides) nymphs and adults noted on young terminals of Acacia koa near Lanai City, Lanai, February 6, 1971, for a new island record. P. uncatoides has now been reported from every major island except Molokai. (Beardsley).

Weather of the week continued from page 108.

Guadlupe Pass, Texas, and Flagstaff, Arizona, received 11.5 inches of new snow bringing their seasonal totals to 116.7 inches. Not in the last 2 decades has so much snow fallen in any season to the end of February. Fog combined with snow in parts of eastern Arizona Thursday afternoon and evening. This increased the hazards of automobile driving. As the weekend approached, moist gulf air flowed northward over the western Great Plains continuing precipitation over the southern Rocky Mountains. Winds blowing across the Great Lakes picked up moisture and produced snow from the Lee shores of the Lakes to New England. Fair skies prevailed over the central Great Plains. The weekend precipitation included light to moderate rain along the Pacific coast, light sprinkles along the gulf coast, and snow flurries from the Great Lakes to the northern and middle Atlantic coast. Strong winds accompanied rain in some places in the Far West. Snow accumulated to about 10 inches in spots near the Great Lakes.

TEMPERATURE: Fair weather prevailed over much of the Nation early in the week. Temperatures Monday afternoon, February 19, ranged from below freezing in the central Rocky Mountains and northern Great Plains to the 60's in the Florida Peninsula and 70's in southern California. Temperatures dropped 10 below freezing Tuesday morning over the entire nation except along the Pacific coast, the Mexican border, the Gulf of Mexico and the southern Atlantic coasts. Tallahassee, Florida, registered 31 degrees Tuesday morning. Subzero weather occurred in northeastern North Dakota, northern Minnesota, and the central Rocky Mountains.

Weather of the week continued on page 122.

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1972

(Continued from page 99)

FORAGE LEGUMES

Highlights: ALFALFA WEEVIL heavy on alfalfa in many Eastern States; most heavy damage in Maryland restricted to western area, decline noted in southwest Pennsylvania for first time since 1969. This weevil reported for first time in 27 counties in Iowa, 28 counties in Texas, and is now statewide in Kansas. PEA APHID was heavy on alfalfa in some areas. ALFALFA LEAF BLOTCH-MINER was of some concern in several Northeastern States.

ALFALFA WEEVIL (Hypera postica) counts averaged 21 adults and 35 larvae per 100 sweeps May 23 in Berkshire County, MASSACHUSETTS. By the third week of June no adults were collected. Larval populations increased rapidly to 2,480 per 100 sweeps by June 3, remained above 2,000 for 14 days, then decreased to 27 per 100 sweeps by June 27. Damage was spotty.

Larval populations increased in all regions of PENNSYLVANIA except the southwest where a decline was recorded for the first time since 1969. Acreage treated for alfalfa weevil increased only slightly in 1972. Alfalfa weevil larvae were first noted on alfalfa in DELAWARE during early April. Injury was moderate in a few fields with counts of 50 larvae per sweep but damage was light in most areas. Populations and damage were slightly heavier than 1971 levels in MARYLAND. Most economic damage was restricted to 6 western counties. Populations were very light in areas outside these counties. The first larval activity was reported April 7 with first-instar larvae ranging 1-2 per 50 tips. Populations increased slowly to 1-5 larvae per 50 tips by mid-April. Early May levels ranged 5-40 per 50 tips in central areas and controls were applied on 2,000 acres. Pupation peaked late in May and was complete by the second week in June. Damage decreased below economic levels the first week in June. Damage by alfalfa weevil was heavier in WEST VIRGINIA than in the past 3 years. Heaviest damage occurred along the Ohio River and some southern counties.

Alfalfa weevil eggs began hatching in Charlotte County, VIRGINIA, March 1, with larvae ranging 5-7 per alfalfa tip. By March 3, about 75 percent of the tips in Powhatan County were infested with first and second-instar larvae. By March 31, about 60 percent of the fields surveyed exceeded economic levels. Damage was heaviest in the southern Piedmont and Coastal Plain areas. By April 21, average defoliation was 15 percent for all fields surveyed. Infestations were heavier than the previous 2 years with severe damage in the northern Piedmont counties of Orange, Culpeper, Stafford, Fauquier, and Clarke. Alfalfa weevil populations throughout SOUTH CAROLINA were not as heavy as in 1971. Many growers obtained adequate control with one treatment rather than the normal two.

Alfalfa weevil was heavy on the 3,000 acres of alfalfa still grown in ALABAMA, and controls were applied. This pest also damaged white clover, vetch, and other legumes in the State. Larvae were first noted on alfalfa in Tipton County, TENNESSEE, during the second week of March. By March 24, populations in older fields were above control levels, while in new fields they were still non-economic. By late April, damage in older fields was moderate to heavy. Where no controls had been applied, damage was severe and 5 or more larvae per stalk were common. Controls applied by April 15 gave moderate to good results. Populations in KENTUCKY after the first cutting did not reach control levels again. The first significant number of early larvae were found in Kentucky in mid-February on about 10 percent of alfalfa tips. First major populations developed in the south-central and western areas in mid-April. Average infestations at that time ranged from 60 to 75 percent. During April, May, and June some untreated alfalfa had infestations of 2,500-3,500 larvae per 100 sweeps. In these fields, defoliation ranged 75-90 percent. Statewide losses on untreated alfalfa averaged about 50 percent. Larval populations began to decline in early June and by early July most fields in the northern areas exhibited larval counts of less than 50 per 100 sweeps. Almost all alfalfa in Kentucky required treatment in 1972.

Alfalfa weevil larvae were first found on April 11 in Clinton County, OHIO. By May 3, 10-25 percent of alfalfa terminals in Holmes County were damaged. Damage reached 25 percent in Noble County by May 10. Destruction of first-cutting alfalfa occurred in Auglaize, Madison, and Wayne Counties. Adult weevils were first found in the northern two-thirds of the State on August 1, two months earlier than usual. Mid-August egg counts made in Pickaway and Hancock Counties were 14 per square foot and 71 per square foot, respectively. Many growers in MICHIGAN cut alfalfa early (late-bud to first-flowers stage) to avoid damage by alfalfa weevil and thus reduced spraying for control. Alfalfa weevil occurred on all alfalfa grown in INDIANA. First larvae were present by the end of March in most southern districts and 21 days later they had removed 50 percent of the leaf surface in some fields. Peak larval populations occurred between April 24 and June 6. Leaf loss was 50+ percent in some fields along the Ohio River by the end of April.

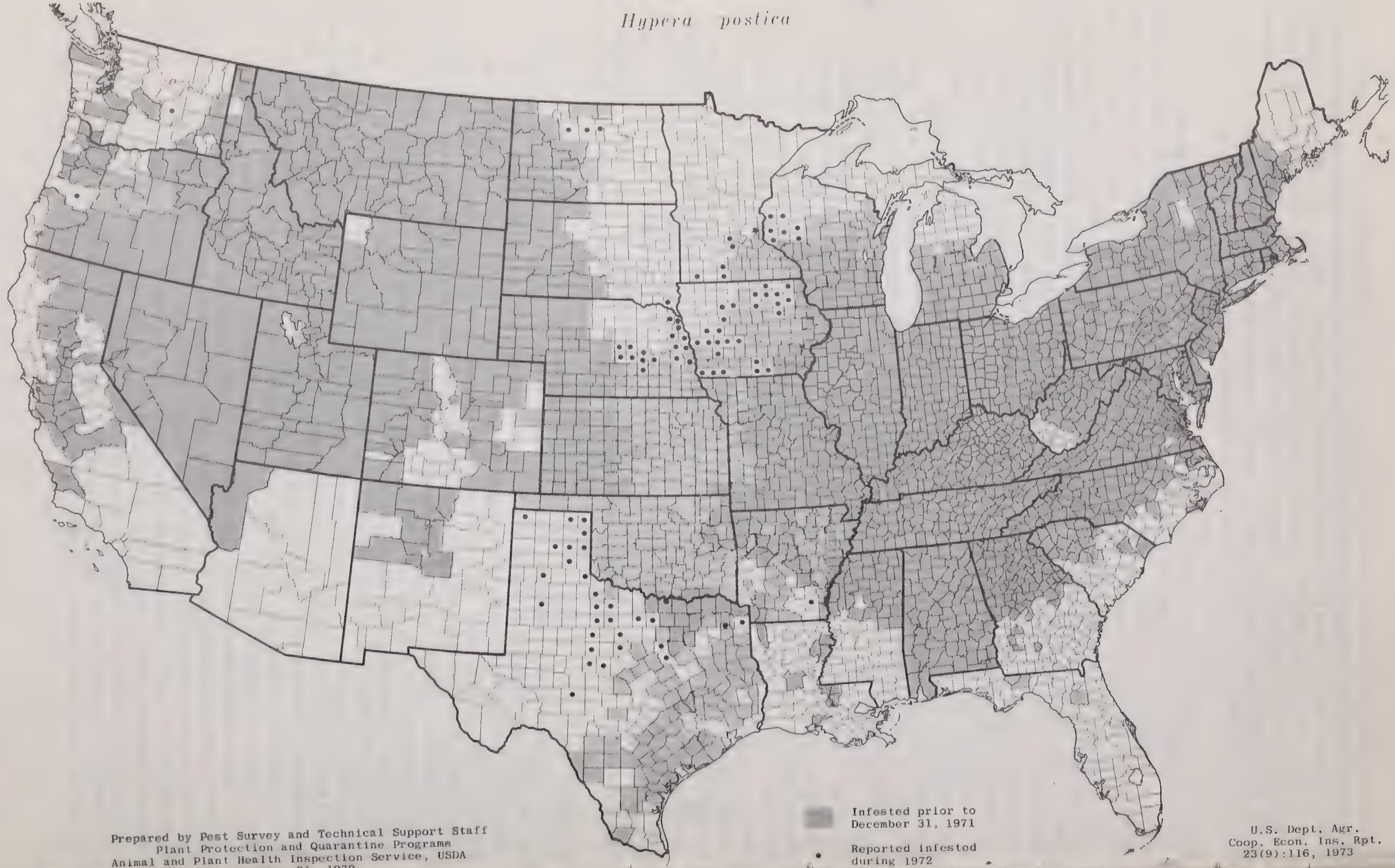
Alfalfa weevil development began much earlier than normal in ILLINOIS. Unseasonably warm weather in late February resulted in early egg hatch and damage. With favorable weather conditions during April, larvae increased tenfold in some southern counties, where larvae averaged 1,300 per 100 sweeps in Jackson and Perry Counties. Within 7 days, counts increased 10 to 100 times in the southern third of the State. The southwest crop district averaged over 8,300 larvae per 100 sweeps. During the first week of May, economic populations of 20 larvae per sweep could be found throughout the southern half of the State. Peak numbers in the Johnson County area ranged 50-200 larvae per sweep. Little economic damage was evident in the northern half of the State. About 104,000 acres of alfalfa were treated in Illinois in 1972. Damage to first-crop alfalfa was light in all areas of WISCONSIN and no controls were necessary in 1972. Larval parasitism by Bathyplectes sp. (an ichneumon wasp) ranged 80-96 percent in the southern area early in June and 33-80 percent in the northwest early in July. Microctonus aethiops (a braconid wasp), an adult parasite of alfalfa weevil, was released in Sauk County in mid-June. Alfalfa weevil egg hatch and first larvae were noted during the week of May 15 in MINNESOTA. Egg laying and hatch extended over many weeks and larvae could still be found July 19. Populations were light and of no economic importance on alfalfa. Six counties were found infested for the first time in Minnesota. Alfalfa weevil larvae were first observed on alfalfa May 11 in Henry County, IOWA. Larvae and/or adults were collected in 27 previously unreported counties in 1972. The peak larval population of 10-22 per sweep was observed in Wayne County May 26 where 25-50 percent of the tips showed feeding. Larvae collected June 7 in Wayne, Mahaska, and Appanoose Counties were 33-93 percent parasitized by Bathyplectes curculionis (an ichneumon wasp).

Alfalfa weevil continued to be the most important insect on alfalfa in MISSOURI. Overwintering egg counts made in the fall in southern areas ranged 20-1,275 per square foot. Hatching was observed in late February in southern areas and by mid-March as far north as the Missouri River. On April 15, larvae ranged 200-1,500 per 10 sweeps in all southern areas. Adults ranged 1-40 per 10 sweeps by early May and by mid-May, warranted controls in a few fields. Economic infestations were observed throughout Missouri with the exception of the northwest area. Infestations developed earlier in ARKANSAS than any time since the pest was first recorded in the State in 1963. Larvae were active in Logan County in late February. Viable eggs were collected in Washington County in late February, followed by the first larval collection in the area March 2. This was about one month earlier than in 1971. There was a long period of egg hatch and larval infestation which indicated that a large percentage of the eggs that were laid the previous winter and spring survived and hatched. In Logan County some fields were treated as many as 3 times. Alfalfa weevil larvae were heavy on alfalfa in Burleson County, TEXAS, January 28. Larvae ranged 20-200 per square foot and eggs 20-132 per square foot. Alfalfa weevil was found for the first time in 29 Texas counties in 1972. All stages of alfalfa weevil were active in the southern half of OKLAHOMA by mid-February. Egg counts of 1,000+ per square foot were found in Grady County by early March. Heavy damage occurred in the southeastern two-thirds of the State during March, April, and May. Activity continued until the end of June in some areas. Adults began moving back into fields in early November.

Alfalfa weevil became a major pest of alfalfa in KANSAS for the first time. Most severe damage occurred in the southeast where up to 75 percent of terminals were damaged in some fields. By late April, some heavy infestations were found in Barber and Sumner Counties and by the second week of May, some heavily infested fields in Elk, Chautauqua, Montgomery, Labette, Crawford, and Bourbon Counties were 40-80 percent defoliated. Adult weevils were heavy in alfalfa in many southeast counties during mid-September indicating movement back into fields for fall egg laying. Alfalfa weevil was collected during May in Phillips County and is now found in all counties in Kansas. Alfalfa weevil was recorded for the first time in 17 NEBRASKA Counties in 1972. Populations generally increased throughout the State, reaching economic levels in a small number of fields in Dawson and Lincoln Counties. Populations peaked about June 5 when larvae in the Gothenburg and Cozad area ranged 272-2,840 per 100 sweeps before cutting. In cut fields, larvae ranged 2-147 per 100 sweeps. Populations in Otoe County peaked May 29, when larvae averaged 38 and adults 0.54 per 100 sweeps in 12 fields. A few weevils were still active in Dawson County fields September 20-21. Populations are expected to increase next year. Alfalfa weevil larvae were damaging irrigated alfalfa by June 9 in McKenzie and Williams Counties, NORTH DAKOTA. Infestations in some fields averaged 5,000 larvae per 100 sweeps.

Distribution of Alfalfa Weevil

Hypera postica



▨ Infested prior to December 31, 1971
● Reported infested during 1972

Prepared by Pest Survey and Technical Support Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service, USDA
December 31, 1972

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Larvae and damage were evident on second and third cuttings until the end of September. Infestations and damage were much heavier than in 1971 due to delayed harvest of all 3 cuttings.

Alfalfa weevil was heavier than normal in eastern COLORADO. Adults became active by the first week in March. Egg laying was noted by mid-March. Larval populations were encountered in early April in the Arkansas Valley and in mid-May in western and northeastern areas. Larvae ranged 150-300 per 10 sweeps in many areas with a large acreage of alfalfa receiving treatments. Alfalfa weevil injury was unusually severe over much of UTAH, causing an estimated $4,000,000 loss to forage and seed alfalfa crops. Parasitism by Bathyplectes curculionis (an ichneumon wasp) was generally heavy during late May and June. Alfalfa weevil caused heavy damage to alfalfa in Custer, Richland, Dawson, Wibaux, Fallon, and Carter Counties, MONTANA. A total of 36,000 acres was lost in the first and second cuttings. Alfalfa weevil larvae required controls on 30,000 acres of alfalfa in Canyon County, IDAHO, by May 25. This was twice the acreage treated in 1971. By early June, larvae ranged up to 100 per sweep in Lincoln County. Jefferson County infestations in June were heavier than recorded for many years. In Twin Falls County, larvae ranged 492-698 per 25 sweeps June 26 and 50 per 25 sweeps July 21. Over 150,000 acres were treated statewide. Alfalfa weevil egg laying began in NEVADA in late March but unfavorable weather retarded hatch and larval development until May when economic populations developed rapidly. Peak larval populations (up to 300+ per sweep) and damage occurred in late May and early June. Controls began in mid-May and continued until mid-June. Alfalfa weevil continued to be a serious pest of alfalfa in central and southern OREGON, where damage was severe in Crook, Grant, Jefferson, and Klamath Counties.

CLOVER HEAD WEEVIL (Hypera meles) was a serious pest to crimson clover seed production in central ALABAMA. Only 900 acres were harvested in 1972 as compared to 1,200 acres in 1971 and 2,220 acres in 1970.

PEA APHID (Acyrthosiphon pisum) population peaks occurred statewide in OHIO during late June and late August. Record infestations in alfalfa were 20 aphids per sweep in Ashland County and 30 per sweep in Mercer County during the second peak. Predators, especially Nabis americoferis, responded rapidly and by September 7 had undergone a 5-50 fold increase in number. Populations remained below normal throughout the season in ILLINOIS and caused very little economic damage. By mid-May, populations ranged 100-500 per 100 sweeps in fields in the southern half of the State. The heaviest infestations occurred in Whiteside and Carroll Counties and ranged 10-50 per sweep. Egg hatch began about April 27 in 4-inch alfalfa in WISCONSIN. Winged forms were noted May 24. Pea aphid counts of 1-3 per sweep were typical early in June, with up to 60 per sweep in some fields. Heavy populations were observed in the northwest in late June, where alfalfa contained 30-70 per sweep and peas 20-40 per sweeps. Counts of 70 per sweep were noted in southwestern area alfalfa in September. Predators were common in alfalfa most of the growing season and parasitism and disease increased late in October.

Pea aphid was heavy (up to 1,000 per sweep) on second-crop alfalfa in Traill, Cass, Richland, and Ransom Counties, NORTH DAKOTA. Second-cutting yields were reduced in areas where moisture was short. Moderate to heavy infestations in alfalfa in several south-central and southwest OKLAHOMA counties by early March and in the rest of the State, except the Panhandle, by late March. Scattered, moderate infestations continued through June. Some problems were observed on first-cutting alfalfa in spring in the Arkansas Valley of COLORADO. Most populations were noneconomic with numbers below 40 per 10 sweeps. Very few control efforts were made or needed. Pea aphid required controls on several thousand acres of alfalfa in Millard and other counties in UTAH. Populations were lighter than normal in several counties where the summer was hotter than usual. Infestations in IDAHO were extensive. There were 150,000 acres of alfalfa infested on the Snake River Plains with some fields treated 3 times to prevent plant stunting. Collections varied from 800 aphids per 25 sweeps in Twin Falls County alfalfa June 26 to 5,000 per sweep in "hot spots" on August 22.

ALFALFA LEAF BLOTCH-MINER (Agromyza frontella) larvae infested 40-50 percent of leaves before first cutting in many alfalfa fields in MAINE. All fields checked were infested, although this is the first year this pest has been reported in the State. (See CEIR Vol. 22, No. 37:616). This blotch-miner was found in all alfalfa in NEW HAMPSHIRE. Infestation ranged 40-90 percent of leaves mined. Sampling began May 23 in Berkshire County, MASSACHUSETTS, where 303 adults per 100 sweeps were collected from alfalfa. By May 30, mines were becoming evident, and adults had increased to 593 per 100 sweeps. Damage ranged from light to heavy. The peak adult sample was taken June 3 with 1,210 per 100 sweeps. Damage reached 26 percent of leaflets mined by mid-June and peaked July 17 with 40 percent of leaflets mined. Adults were still present in mid-September and mines were evident through the end of September. Heavy alfalfa leaf blotch-miner adult populations were first found in VERMONT in Hartland, Windsor County, May 26. It has now been found infesting alfalfa in all counties of the State. A. frontella adults were collected in 7 fields in Northampton and Bucks Counties, PENNSYLVANIA, May 11. Mines were found in 0.24-38 percent of leaflets sampled in 4 alfalfa fields in the same areas July 3.

ALFALFA CATERPILLAR (Colias eurytheme) larvae were light on alfalfa in Dona Ana, Eddy, Chaves, Lea, Roosevelt, Curry, and Quay Counties, NEW MEXICO, during June. Late season buildup was evident in fourth and fifth cuttings of alfalfa in Chaves and Eddy Counties. Many fields required treatment. Larvae damaged alfalfa in ARIZONA from July through October to the extent that cutting did not control population buildups. Growers generally treated fields in July in Yuma County, August in Maricopa County, and October in Graham County. Alfalfa caterpillar was very heavy on alfalfa in the Curlew Valley of Box Elder County, UTAH, in late summer. Infestations were generally light to moderate elsewhere in the State.

GREEN CLOVERWORM (Plathypena scabra) was active in alfalfa in OKLAHOMA from late March into mid-November. Counts of 25-40 per 10 sweeps were found in many western counties from late September to mid-November. Larvae were more common than usual in alfalfa in INDIANA, economic in only one field in Jennings County. Counts ranged up to 6 per sweep in late August.

GRASSHOPPER populations were slightly heavier than normal in ILLINOIS and resulted in light feeding damage in alfalfa and clover. Numbers were as high as 30 per square yard in roadside grasses in several northern counties during July. The fall adult survey in alfalfa and clover indicated a State average of about 5 grasshoppers per square yard. Approximately 83,000 acres received control treatments. Nymphs of Melanoplus femurrubrum and M. sanguinipes, were first noted in forage crops in WISCONSIN June 7. M. differentialis was present by June 14. Adults of M. femurrubrum were present from August 1 into early November. Surveys conducted in early August revealed moderate infestations (10-30 per sweep) in scattered localities throughout central and southern Wisconsin and severe infestations (30+ per sweep) across the southern tier of counties. Despite heavy populations in these areas, damage to forage crops was minimized by good plant growth due to frequent rains and little treatment was necessary. Grasshoppers showed a marked decrease in MINNESOTA over 1971. An estimated 92,000 acres of forage crops had economic populations compared to about 160,000 acres in 1971. The dominant species continued to be M. femurrubrum. Indications are that in 1973 infestations will be scattered and localized.

SPIDER MITES (Tetranychus spp.) began increasing rapidly on seed alfalfa in Churchill, Humboldt, and Pershing Counties NEVADA in June. Infestations reached economic levels in late June through early August when 3,800+ acres were treated. Another 2,700 acres were treated for these pests and for aphids and lygus bugs.

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) ranged moderate to heavy on soybeans in Dorchester, Wicomico, and Worcester Counties, MARYLAND. Populations were above normal in May and early June. In June, adults ranged 1-10 per row yard, with 800 acres of 3 to 5-inch soybeans treated in Wicomico and Dorcester Counties. Larvae were present in most fields by late June. The heaviest mid-July larval counts ranged 7-20 per row foot with all instars present. An estimated 10,000 acres were treated in July. Pupation was 60 percent complete by August. Second-generation larvae ranged light to moderate. About 1,000 acres required controls during August and September in Somerset and Wicomico Counties, Maryland. Mexican bean beetle caused 5 percent foliar loss to soybeans early in the season in Breckinridge County, KENTUCKY. Populations increased slowly through summer and by August 25 had reached moderate to high levels, with 39 adults and 52 larvae per 360 row feet in Henderson County. A population buildup was first noticeable on soybeans in NORTH CAROLINA in the northeastern counties in mid-June. Up to 4 larvae per square foot were observed in scattered fields in the Camden County area by early July. Defoliation ranged up to more than 70 percent in some fields in the northeastern counties and as many as 3 control applications were made.

GREEN CLOVERWORM (Plathypena scabra) was first reported as a minor problem in KENTUCKY July 14 in Hickman County. Populations peaked in western counties during late August when larvae averaged 400 per 360 row feet at one location, 5 per linear foot at another. A very heavy population was observed in Hancock County. Damaging infestations of green cloverworm were reported on about 27,000 acres of soybeans in east-central and southeastern KANSAS.

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) reached damaging levels (30 percent defoliation) in Walton County, FLORIDA, by July 25 and by August 25 in Gadsden and Alachua Counties. Populations were heavier and occurred earlier on soybeans in the State than in previous years, with most infestations requiring one or two chemical treatments to prevent complete defoliation. Velvetbean caterpillar was a pest in numerous isolated fields in the coastal counties of ALABAMA, with the heavier numbers in the extreme southwest area.

PEANUTS

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) larval damage to peanuts in NORTH CAROLINA was 3 to 5 times more severe in 1972 than in 1971. This pest caused economic losses to about 50,000 acres in Northampton, Halifax, Edgecombe, Martin, Bertie, and Hertford Counties. In VIRGINIA, damage was greater in 1972 than in the past several years in Nansemond, Isle of Wight, Sussex, Southampton, and Prince George Counties. Damage ranged as high as 40-50 percent in some peanut fields.

REDNECKED PEANUTWORM (Stegasta bosqueella) appeared in peanuts last week of June in OKLAHOMA and by late August and early September 75-85 percent of the terminals were infested in most areas. A late season buildup on peanuts in Roosevelt County, NEW MEXICO, was noted in October. Many fields showed 75 percent of terminals damaged. Due to the lateness of the growing season, controls were not applied.

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) infestations were detected in early July in Comanche, Erath, Eastland and Brown Counties, TEXAS. Damage occurred in up to 70 percent of all dryland peanut plants.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) was more widespread and more damaging to peanuts than any previous season in ALABAMA. Damaging infestations required controls throughout the 9 southeastern counties. In the Northampton and Halifax County area of NORTH CAROLINA, spots up to one acre in size in peanut fields were observed with advanced yellowing and dead leaves. Webbing, with thousands of mites per leaf, was conspicuous in smaller spots.

COTTON

The first large scale BOLL WEEVIL (Anthonomus grandis) emergence in TEXAS was reported from the lower Rio Grande Valley during the week of June 12. In mid-June, adults began to appear in older cotton in the Rolling Plains area, and by late June were increasing rapidly in most infested areas of the State. Punctured square counts in the south-central, Blacklands, and north-central areas ranged 1-80 percent. First boll weevil adults of the season in OKLAHOMA were taken in traps in Jackson County May 16 and the first punctured squares were found in mid-June. Punctured squares ranged light to moderate (less than 25 percent) through July in all areas. Scattered fields were economically infested in most areas of Oklahoma during August and September. Boll weevil was heavier and more widespread in ARKANSAS in 1972 than in 1971. This trend has been underway for several years as winter weather has not been cold enough to reduce overwintering weevils significantly since January 1963.

Boll weevil infestations were generally widespread throughout the Bootheel area of MISSOURI with the heaviest infestations concentrated in the areas along Crowleys Ridge in Stoddard and Butler Counties. The first overwintered boll weevils in TENNESSEE were caught in sex-lure traps during the week ending May 5 in McNairy and Hardeman Counties. By mid-June, overwintered weevils were being found in cotton throughout the southern Tier of counties, and some feeding signs were noted.First-generation weevils began to emerge by mid-July and punctured square counts ranged 1-35 percent. By late July, the first-generation emergence had peaked, and punctured square counts ranged 1-55 percent. Second generation emergence began during the week ending August 11, and counts ranged 4-95 percent punctured squares. Weevils continued to damage squares until about mid-September. Boll weevil was by far the most serious pest of cotton in Tennessee in 1972. Boll weevil began emerging from hibernation in Johnston County, NORTH CAROLINA, April 21. During early August, 22 percent of fields checked had populations at or above control levels. In Northampton County, about 51 percent of 768 fields checked during July required treatment.

Boll weevil counts on presquare cotton on 38 farms in 10 ALABAMA counties revealed a high number of weevils had successfully overwintered. First reported overwintered weevils occurred in flight April 2 at Headland, Henry County. First weevil emergence was noted in early June. Populations were heavy throughout Alabama all during the growing season. Boll weevil emergence began in MISSISSIPPI during mid to late May. Infestations averaged 3 percent statewide by mid-June.

BOLLWORM (Heliothis zea) caused only minor damage in most cotton in NEW MEXICO. Controls were necessary in an area including southern Chaves and northern Eddie Counties. Beneficial insect populations remained heavy in most fields this season and aided in the control of this pest. A general increase in H. zea activity was noted in most cotton-growing areas of TEXAS, except in the South and High Plains areas. During late July, populations declined with only isolated cases of heavy activity noted. In OKLAHOMA, H. zea remained light all season in most fields that were not treated for other cotton pests. In treated fields, damage was moderate to heavy by mid-August. TOBACCO BUDWORM (H. virescens) began increasing at this time and made up 70-100 percent of the bollworm population on cotton in many areas of Oklahoma by September. Tobacco budworm was the heaviest ever observed on cotton in ARKANSAS. In Chicot and Ashley Counties conventional controls were completely ineffective and about 500 acres of cotton were plowed under as it was not worth harvesting. In late September infestations were as high as 40,000 larvae per acre.

BOLLWORMS (Heliothis spp.) were generally very light on cotton throughout KENTUCKY, except for heavy infestations in Warren, Logan, Todd, and Barren Counties. In NORTH CAROLINA, Heliothis spp. eggs began appearing on cotton during the second week of July in Scotland County. The number of acres severely damaged (25+ percent boll loss) was 50 percent greater than in 1971 in many southern Coastal Plain counties. Counts of 50+ percent damaged bolls were observed in fields of Harnett, Cumberland, Hoke, Scotland, and Robeson Counties. Heliothis spp. became pests of cotton throughout ALABAMA following a buildup of 2 or more generations on clover, vetch, and corn. Damage was held at a minimum by the proper timing of controls made possible by increased surveys. First Heliothis spp. eggs were noted in MISSISSIPPI in early June. The first larval generation was of little economic importance. Damaged squares ranged 2-3 percent by mid-July. Infestations were spotty and severe in some southern and delta counties.

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) infestations increased in many northern counties of TEXAS during the week of June 13. This fleahopper continued to be the dominant pest of cotton in the Blacklands during the remainder of the month. In early July, it was the major problem in the Rolling Plains area. Cotton fleahopper was active in OKLAHOMA by mid-June and heavy infestations were present in many southwestern counties from mid-June to mid-July.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) populations on cotton throughout NORTH CAROLINA were held in check early in the season by cool weather. However, by July numbers had reached control levels in 10 percent of fields checked in Scotland County. Twospotted spider mite was largely confined to the central and northern areas of ALABAMA during the 1972 season. However, this spider mite was more of a problem statewide this season than for more than 5 years, probably due to a heavy overwintering population. STRAWBERRY SPIDER MITE (T. turkestani) infestations were widespread throughout the Bootheel area of MISSOURI with the primary concentration in New Madrid, Pemiscot, and Mississippi Counties. By August 11, 35.10 percent of the cotton fields scouted were infested with spider mites, mainly T. turkestani.

TOBACCO

GREEN PEACH APHID (Myzus persicae) alates moved into tobacco in southern MARYLAND about July 10. By July 21, infested plants ranged 2-15 per 50 plants in Prince Georges and Charles Counties. About 20 percent of the growers in southern areas applied pre-plant systemic treatments. Control costs were estimated at about $700,000. Damage to the tobacco crop was light in 1972, and below that of 1971.

TOBACCO FLEA BEETLE (Epitrix hirtipennis) damage was severe and common on tobacco in southern OHIO from June through August. By early September, every leaf in several Gallia and Lawrence County beds showed moderate to heavy damage. Tobacco flea beetle damage to tobacco in plant beds in KENTUCKY was heaviest in Scott, Hardin, and Logan Counties. Newly transplanted tobacco exhibited some foliar loss with the heaviest losses (about 10 percent) in Woodford, Shelby, and Lincoln Counties. Populations were light during spring and early summer but increased steadily and peaked in August. Populations were heaviest in Green County with about 20 per plant but counts in most areas of the State averaged fewer than 10 per plant. Overwintered tobacco flea beetle adults were less numerous in VIRGINIA than in 1971 and were held far below economic levels throughout most of the season.

TOBACCO HORNWORM (Manduca sexta) infestations were generally below economic levels in most areas of KENTUCKY. Heavy infestations occurred on tobacco in Barren, Anderson, Marshall, Christian, Pulaski, and Caldwell Counties during July and August.

SUGAR BEETS

ARMY CUTWORM (*Euxoa auxiliaris*) problems developed early in June in the Red River Valley of MINNESOTA with sugar beets and some sunflowers being damaged. A total of 5,500 acres of sugar beets required reseeding.

The first SUGARBEET ROOT MAGGOT (*Tetanops myopaeformis*) adults of the season in NORTH DAKOTA emerged May 23 with peak fly emergence about June 9. The first eggs were seen May 31 and hatch began June 6. During mid-June, larvae averaged 20 per plant on untreated beets and ranged up to 150 per plant by the end of June. In treated sugar beets, larvae ranged up to 60 per plant.

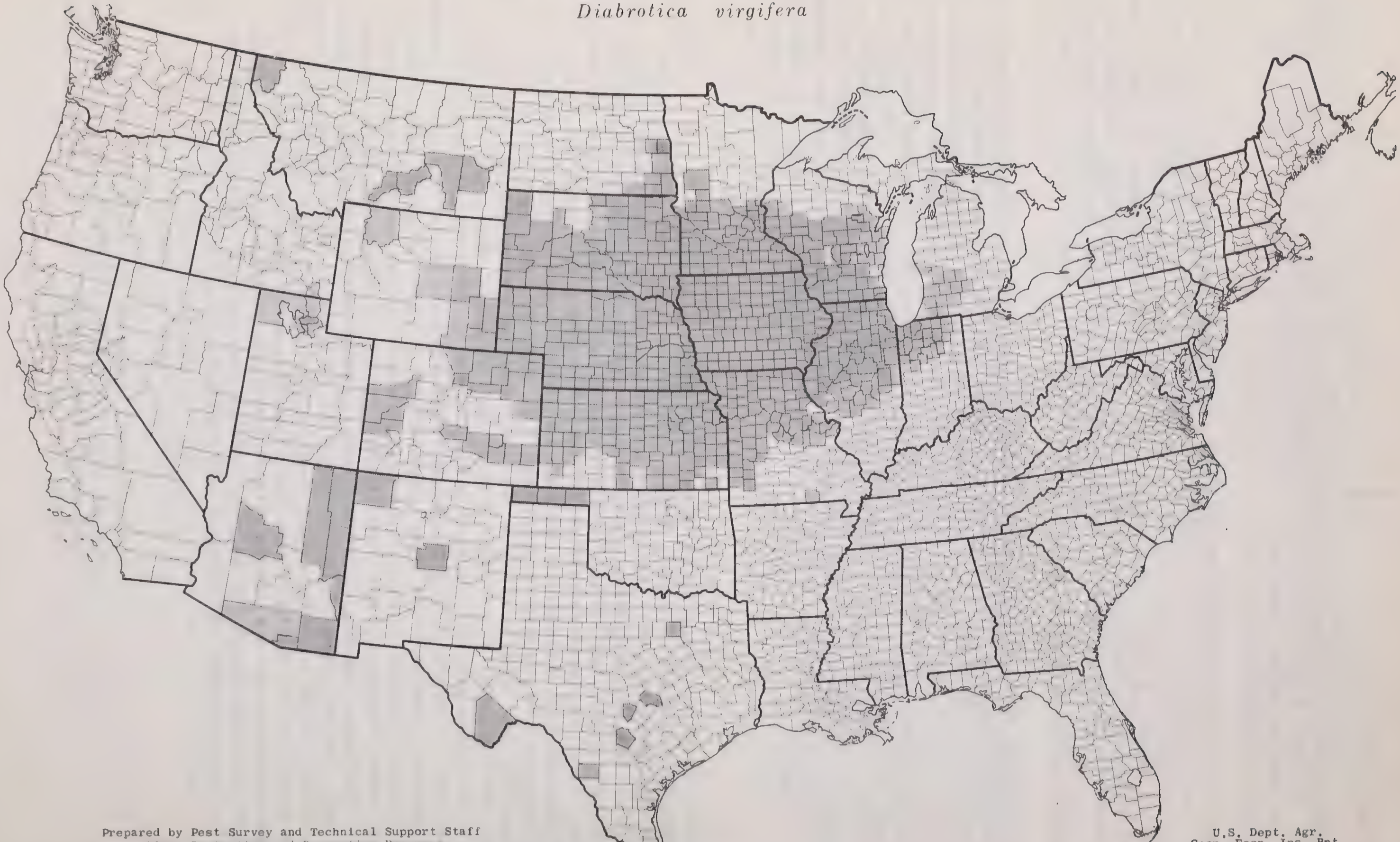
MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (*Homoeosoma electellum*) larvae ranged 5-25 per head in several fields of sunflowers in Colfax and Platte Counties, NEBRASKA, during late July and early August. Larvae destroyed a few fields of sunflowers in York and Seward Counties. Damage to sunflowers by this pest is expected to be heavier during 1973 than in 1972 in Nebraska. Sunflower moth infestations were widespread across the 35,000 acres of sunflowers grown in IOWA in 1972. Larvae ranged 3-13 (averaged 6.2) per head in 63-95 percent of heads in Polk County fields during the first two weeks of August. Chemical controls were not applied to infested fields in Iowa.

Weather of the week continued from page 112.
Fraser, Colorado and Big Piney, Wyoming recorded -24 degrees Tuesday morning. Bitter cold pushed across the northern Great Plains but southern California enjoyed summer temperatures; 81 degrees at Culver City Tuesday. Cold Arctic air pouring across the Canadian border held afternoon temperatures over much of Minnesota and Wisconsin in the 12 to 20-degree range Wednesday afternoon and spots in northern New Mexico remained below freezing all day Thursday. The highest temperature at Las Vegas, New Mexico, Thursday was 52 degrees. Warming occurred over North Dakota where Bismarck recorded 53 degrees Thursday. Birmingham, Alabama, also recorded 53 degrees Thursday due to northerly winds resulting from a High over the southern Great Plains and a Low centered off the northern Atlantic coast. Much of the area from the Great Lakes to the Ohio River remained below 32 degrees all day Thursday. Early morning temperatures over the weekend ranged from a few degrees above zero in the vicinity of the Great Lakes to the 50's in southern California, along the Gulf of Mexico, and most of Florida. Afternoon temperatures were generally near 20 degrees in northern New England, near freezing over the northern Great Plains, near 70 degrees along the Gulf of Mexico, and the 70's in southern California and most of Florida.

Distribution of Western Corn Rootworm

Diabrotica virgifera



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